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U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK

ATTORNEY'S DOCKET NUMBER

**TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. § 371**

449122019500

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

10/018059
Not yet assigned

INTERNATIONAL APPLICATION NO.

INTERNATIONAL FILING DATE

PRIORITY DATE CLAIMED

PCT/DE00/01113

April 11, 2000

June 15, 1999

TITLE OF INVENTION

PROCEDURE AND ARRANGEMENT FOR OPTICAL INFORMATION REPRESENTATION

APPLICANT(S) FOR DO/EO/US

Oliver ZECHLIN

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below
4. ☒ The US has been elected by the expiration of 19 months from the priority date (PCT Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☒ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☒ has been communicated by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ An English language translation of the International Application under PCT Article 19 (35 U.S.C. 371(c)(2)).
 - a. ☐ is attached hereto.
 - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).
 - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ have been communicated by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☐ A **FIRST** preliminary amendment.
14. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
15. ☐ A substitute specification.
16. ☐ A change of power of attorney and/or address letter.
17. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.
18. ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4).
19. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
20. ☒ Other items or information: 1) Application Data Sheet; 2) Int'l Search Report; 3) IPER; 4) Return receipt postcard.

CERTIFICATE OF HAND DELIVERY

I hereby certify that this correspondence is being hand filed with the United States Patent and Trademark Office in Washington, D.C. on December 14, 2001.

Melissa Garton
Melissa Garton

U.S. APPLICATION NO. (if known, see 37 CFR 1.51) 10/018059 Not yet assigned		INTERNATIONAL APPLICATION NO. PCT/DE00/01113		ATTORNEY DOCKET NO. 449122019500	
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21. <input checked="" type="checkbox"/> The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO.....\$1,000.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO.....\$860.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO.....\$710.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provision of PCT Article 33(1)-(4)\$690.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4)\$100.00				CALCULATIONS PTO USE ONLY	
ENTER APPROPRIATE BASIC FEE AMOUNT =				\$860.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$0	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	- 20 =		x \$18.00	\$0	
Independent claims	- 3 =		x \$80.00	\$0	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$270.00	\$0	
TOTAL OF ABOVE CALCULATIONS =				\$860.00	
<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				\$0	
SUBTOTAL =				\$0	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				+	\$0
TOTAL NATIONAL FEE =				\$0	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				+	\$0
TOTAL FEES ENCLOSED =				\$860.00	
				Amount to be refunded:	\$
				charged:	\$

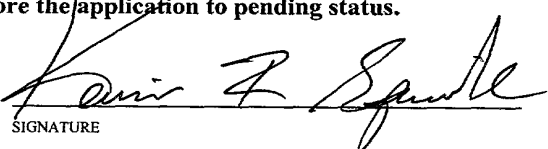
a. ☒ Please charge my **Deposit Account No. 03-1952** (referencing Docket No. 44912-20123.00) in the amount of \$860.00 to cover the above fees. A duplicate copy of this sheet is enclosed.

b. ☒ The Commissioner is hereby authorized to charge any additional fees that may be required, or credit any overpayment to **Deposit Account No. 03-1952** (referencing Docket No. 44912-20123.00).

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Kevin R. Spivak
 Morrison & Foerster LLP
 2000 Pennsylvania Avenue, N.W.
 Washington, D.C. 20006-1888


 SIGNATURE

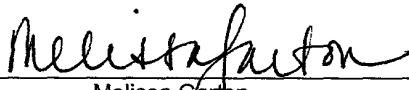
Kevin R. Spivak
 Registration No. 43,148

December 14, 2001

#9

CERTIFICATE OF HAND DELIVERY

I hereby certify that this correspondence is being hand filed with the United States Patent and Trademark Office in Washington, D.C. on May 8, 2002.



Melissa Garton

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Oliver ZECHLIN

Serial No.: 10/018,059

Examiner: Not yet assigned

Filing Date: December 14, 2001

Group Art Unit: Not yet assigned

For: PROCEDURE AND
ARRANGEMENT FOR OPTICAL
INFORMATION
REPRESENTATION

PRELIMINARY AMENDMENT

BOX PCT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination on the merits, please amend this application as follows:

In the Claims:

What is claimed is:

1. (Amended) A method for optical information presentation on information, on a mobile device, comprising:
 - providing a graphics/text presentation, for use with stored graphics and/or graphics elements used in the mobile device;
 - calling up the stored graphics and/or graphics elements via address and position data transmitted with text information, and positioning them on an optical display unit; and
 - assigning a predetermined number of channels for each category of the information to an additional service, each channel allocated a respective specific set of stored graphics and/or graphics elements.

449122019500

2. (Amended) The method as claimed in claim 1, wherein stored graphics and/or graphics elements are updated by memory interchange after downloading from an IP network.
3. (Amended) The method as claimed in claim 2, wherein at least one predetermined channel is used as an information channel for available updates for the terminal software.
4. (Amended) An arrangement for providing information presentation on information on a mobile device, the mobile device comprising:
a graphics selection memory to store graphics and/or graphics elements; and
a selection device to select predetermined channels, and associated graphics or graphics elements.
5. (Amended) The arrangement as claimed in claim 4, wherein the information is presented on an accessory which has an alphanumeric keypad or a touch screen.
6. (Amended) The arrangement as claimed in claim 5, wherein the accessory is connected to the mobile device terminal via an infrared path or a radio transmission path.

In the Abstract:

Please replace the Abstract with the substitute Abstract attached hereto.

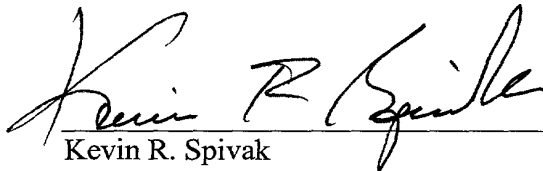
REMARKS

Amendments to the specification have been made and are submitted herewith in the attached Substitute Specification. A clean copy of the specification and a marked-up version showing the changes made are attached herewith. The claims and abstract have been amended in the attached Preliminary Amendment. All amendments have been made to place the application in proper U.S. format and to conform with proper grammatical and idiomatic English. None of the amendments herein are made for reasons related to patentability. No new matter has been added.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made".

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 449122019500. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Respectfully submitted,


Kevin R. Spivak
Registration No. 43,148

Dated: May 8, 2002

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

For the convenience of the Examiner, the changes made are shown below with deleted text in strikethrough and added text in underline.

In the Claims:

New Patent Claims **What is claimed is:**

1. (Amended) A method for optical information presentation on information, ~~which is provided via an additional service and is transmitted via an air interface, on a mobile radio terminal (210) or an accessory (130) to a, or such a mobile radio module, in which case a mixed~~ **on a mobile device, comprising:**

providing a graphics/text presentation is ~~provided, for which purpose~~ **use with** stored graphics and/or graphics elements ~~are used in the mobile radio terminal (210) and/or accessory (130), which are called up~~ **device;**

calling up the stored graphics and/or graphics elements via address and position data ~~which is transmitted together with text information, and are positioned~~ **positioning them** on an optical display unit(131; 211), ~~characterized in that the additional service is assigned; and~~

assigning a predetermined number of channels (CH1, CH2, ... CHn) for each **category of the information category, and to an additional service,** each channel is allocated a respective specific set of stored graphics and/or graphics elements.

2. (Amended) The method as claimed in claim 1, ~~characterized in that~~ **wherein** stored graphics and/or graphics elements are updated by memory interchange (133) ~~or by overwriting memory areas, in particular after downloading from an IP network(260).~~

3. (Amended) The method as claimed in claim 2, ~~characterized in that~~ **wherein** at least one predetermined channel (~~CHi~~) is used as an information channel for available updates for the terminal software.

4. (Amended) An arrangement for ~~carrying out the method as claimed in one of the preceding claims, in which case the mobile radio terminal (210) or the accessory (130) has~~ **providing information presentation on information on a mobile device, the mobile device comprising:**

a graphics selection memory (133) ~~for the~~ **to store** graphics and/or graphics elements; characterized in that the mobile radio terminal (210) or the accessory (130) has selection means for selecting; **and**

a selection device to select predetermined channels(CH1, CH2, ... CHn), and ~~hence the~~ associated graphics or graphics elements.

5. (Amended) The arrangement as claimed in claim 4, ~~characterized in that~~ **wherein** the information is presented on an accessory (130) which has an alphanumeric keypad (132) or a touch screen.

6. (Amended) The arrangement as claimed in claim 5, ~~characterized in that~~ **wherein** the accessory (130) is connected to the mobile radio **device** terminal (110) via an infrared path or a radio transmission path(121, 122), ~~in particular a Bluetooth path.~~

In the Abstract:

Please replace the Abstract with the substitute Abstract attached hereto.

METHOD AND ARRANGEMENT FOR OPTICAL INFORMATION PRESENTATION

Abstract

A method and arrangement for optical information presentation on information, which is provided via an additional service and is transmitted via an air interface, on a mobile radio terminal or an accessory for such a mobile radio module, in which case a mixed graphics/text presentation is provided, for which purpose stored graphics and/or graphics elements are used in the mobile radio terminal and/or accessory, which are called up via address and position data which is transmitted together with text information, and are positioned on an optical display unit.

METHOD AND ARRANGEMENT FOR OPTICAL INFORMATION
PRESENTATION

CLAIM FOR PRIORITY

5 This application claims priority to International
Application No. PCT/DE00/01113 which was published in
the German language on December 21, 2000.

TECHNICAL FIELD OF INVENTION

10 The invention relates to a method for optical
information presentation on a mobile radio terminal, or
an accessory for a mobile radio terminal or a GSM
module, and to an arrangement for carrying out the
method.

BACKGROUND OF THE INVENTION

15 In the developed industrial nations, mobile telephony
has become one of the most dynamic mass markets in
recent years and, in the process and virtually at the
20 same time, has exposed development generally comparable
to the commercial development of the Internet. The
establishment of digital mobile radio networks based on
the GSM and PCN standards has thus started to create
the preconditions for international and
25 intercontinental mobile telephony, and the increasingly
faster extension of these systems means that they are
rapidly approaching the aim of everyone being
accessible anywhere and immediately by means of mobile
telephony.

30 Owing to the system requirements, modern mobile
telephones have an extremely complex technical design
and are not distinguished by being cheap appliances.
The manufacturers are therefore always looking for
35 opportunities to implement additional useful features
which are intended to persuade even people who have no
requirement, or even no desire, to be accessible all
the time everywhere to purchase a mobile telephone.
Minor games features, which are intended to increase

the attractiveness of mobile telephones at times, have been found to be unsuitable for this purpose.

On the other hand, there is a large and growing market for information services which are, in particular, even required while traveling and for which mobile telephones could thus be a suitable implementation means. Thus, fundamentally, mobile telephone manufacturers and information providers have a common interest in finding solutions to further increase the usefulness of mobile telephones by means of additional services for those having such mobile telephones.

Some methods for this are already known are also in use in practice to an extent- for example the cell broadcast method, which is already used by D2 Mannesmann in Germany. As is known, the GSM mobile radio standard allows the transmission of short messages with a limited range of characters (SMS = Short Message Service), and services such as D2 MessagePlus, which have already been implemented, are based on this capability.

SUMMARY OF THE INVENTION

In one embodiment of the invention, there is a method for optical information presentation on information, on a mobile device. The method includes, for example, providing a graphics/text presentation, for use with stored graphics and/or graphics elements used in the mobile device, calling up the stored graphics and/or graphics elements via address and position data transmitted with text information, and positioning them on an optical display unit, and assigning a predetermined number of channels for each information category, to an additional service each channel allocated a respective specific set of stored graphics and/or graphics elements.

In another aspect of the invention, stored graphics and/or graphics elements are updated by memory

interchange after downloading from an IP network.

In another aspect of the invention, at least one predetermined channel is used as an information channel for available updates for the terminal software.

5 In another embodiment of the invention, there is an arrangement for providing information presentation on information on a mobile device. The arrangement includes, for example, a graphics selection memory to store graphics and/or graphics elements, and a
10 selection device to select predetermined channels, and associated graphics or graphics elements.

In another aspect of the invention, the information is presented on an accessory which has an alphanumeric keypad or a touch screen.

15 In another aspect of the invention, the accessory is connected to the mobile device terminal via an infrared path or a radio transmission path.

BRIEF DESCRIPTION OF THE DRAWINGS

20 In addition, advantages and useful forms of the invention are described in the dependent claims and the following description of preferred exemplary embodiments with reference to the figures, in which:

25 Figure 1 shows an illustration of a system configuration according to a first embodiment of the invention.

Figure 2 shows an illustration, in the form of a
30 sketch, of a system configuration according to a second embodiment of the invention.

Figure 3 shows an illustration of the display screen of the accessory according to Figure 1 in an initial
35 phase of a call to an information service.

Figures 4 to 8 show the display screen of the accessory when using different information services.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

In practice, it has been found that the previous type of information transmission to mobile telephones and optical information presentation on their display areas cannot satisfy the increased expectations of users for an attractive information display. Even while traveling, the user who has become used to attractive information displays from the standards set by printing media and television is prepared only to put up with the small alphanumeric display areas of mobile telephones, with their cumbersome text display. Calling up information, or even interactive processes, are also made considerably more difficult by the difficulties in using the keys on conventional mobile telephones. The critical fundamental disadvantage of mobile radio services with providing additional information services which are as attractive as possible with currently known solutions is, however, the restricted available bandwidth.

The invention provides a method for optical information display on a mobile radio terminal (or an accessory) and of providing a corresponding arrangement, by means of which a considerably more attractive and more informative information display can be provided, while observing the current limitations on the transmission bandwidth.

The invention provides a mixed graphics/text presentation using predetermined graphics or graphics modules in a way that conserves bandwidth. The invention also allows storing a range of graphics or graphics elements at the terminal end, and maintaining them such that they can be called up, allowing attractive information and commercial presentation without the graphics actually needing to be transmitted via the air interface - that is to say with the bandwidth restriction. In fact, it is preferable to call up the locally stored graphics by appropriate

address and position codes in the terminal (or an accessory) and to display them on its display area in the desired size and position, and to combine them with actually transmitted text sections of a message, in an
5 informative and attractive manner.

A normal mobile telephone of the present-day conventional type allows an information display whose attractiveness is only limited, due to the small size
10 of the display area - although appliances are now already available which offer considerably better preconditions in this context in that, for example, when unfolded, they offer a display area occupying virtually the entire appliance surface area and which,
15 in some appliances, is also already in the form of a touch screen and which, in other appliances, has an associated alphanumeric keypad which can be operated relatively well. One preferred embodiment of the proposed invention is provided.

20 An alternative embodiment is provided for implementation with an accessory, which has a sufficiently large display area and an associated keypad in the form of an organizer or handheld PC - or
25 has a corresponding touch screen.

Such an accessory has an interface which is suitable for linking to the mobile telephone, and can be connected to the mobile telephone via a cable, but
30 preferably via an infrared or radio transmission path.

Irrespective of whether such a range of graphics or graphics elements is stored in a mobile telephone itself or in an accessory for such a mobile telephone,
35 two different approaches are provided, in principle, for updating the range of graphics and the associated software. In a first embodiment, the graphics are stored in a data storage medium which is prefabricated and marketed separately from the terminal, and can thus

be replaced by an update directly, when updating is required. In another embodiment, which may be preferable for commercial purposes, updating can be carried out by downloading from the Internet or some other IP network, so that the appliance is provided with a read only memory with an appropriate capacity.

The additional service is implemented with a predetermined number of channels which are each defined, and whose contents are each specified, by the network operator - who is at the same time the provider of the cell broadcast transmission technology. The network operator can then rent the channels prepared to third parties who wish to have a range of information or a commercial message, or both, and (depending on the specific configuration of the system), the user can either use all the channels without any differentiation, or else a group of channels, or even only individual channels, with his terminal being prepared appropriately by storing ranges of graphics associated with selected channels.

In addition to the channels with specified contents, it is also possible to provide channels via which the user is informed of the capability to update his terminal software, or receives other information from the network operator himself.

Figure 1 shows an information system 100 as an exemplary embodiment of the invention, in which a simple mobile telephone 110 with a single-line alphanumeric display 111 and a numerical keypad 112 is connected via two interface/transceiver units 121, 122, which are described in GSM specifications 07.05 and 07.07, and an infrared path formed between them, to an accessory 130, which has a large matrix screen 131 and an alphanumeric keypad 132. One such accessory is, for example, an organizer modified for implementation of the invention, which is referred to as a "databank" or

a handheld PC. Instead of the keypad, an accessory such as this may also have a touch screen as the input device. The accessory 130 is designed to accommodate a memory card 133, in which the software required at the terminal end to operate the information system is stored, in its respective latest form.

The mobile telephone 110 is connected in the normal way - which will thus not be explained any further here - to a GSM mobile radio network 140, into which, via a suitable access device 150, an information service server 160 feeds a number of information services with differentiated contents, which are disseminated in the mobile radio network 140 via the channels CH1, CH2, ... CHn. These channels are specified by the operator of the mobile radio network 140 and are available to the information service provider. The person using the mobile telephone 110 who wishes to use that information service can - depending on the specific system configuration - access only selected channels, or else all the channels. In Figure 1, the symbolic inscription on the memory card 133 "CH1 CH2" indicates that the user has subscribed to only two selected channels and, after insertion of the memory card 133 into his accessory 130, has available only the software required for these channels - in particular specific graphics and graphics elements, as well as associated addressing and positioning software.

The information system 100 works in the way described in principle above, in that the information service provider provides schematically specified information services, for example weather reports, traffic reports, travel information etc., via the server 160 in the channels CH1, CH2, ... CHn, and these are disseminated by the operator of the GSM network 140 as "content over the air". The person using the mobile telephone 110 and the accessory 130 satisfies the terminal-end system preconditions for use of the desired information

services by obtaining and inserting the ROM memory card 133. In principle, text information as well as address and position data for calling up and for positioning specific graphics and graphics elements stored in the ROM memory card 133 are transmitted via the server 160 and the mobile radio network 140 - matched to the narrow available bandwidth in the mobile radio network - to the display screen 131 of the accessory 130. The accessory 130 is used to combine the transmitted data with the data stored on the ROM card 133 to produce an informative and attractive information display on the display screen 131.

Figure 2 shows a sketch of an information system 200 of somewhat different construction, in which a high-quality mobile telephone 210 with a multiline matrix display 211 and an alphanumeric keypad 212 is connected to a GSM mobile radio network, which is annotated here by the reference number 220. An information service server 240 is once again connected to the GSM network 220 via a suitable access device 230, and is also connected via a modem 250 to an IP network 260 (for example the Internet, but possibly also a commercial LAN). The IP network 260 is connected to the GSM mobile radio network 220 via a network interface 270 - which is known per se.

In this case as well, the information service is offered in various channels CH1, CH2, ... CHn, and the person using the mobile telephone 200 can obtain the service globally or on a channel-specific basis. Firstly, updating information relating to the terminal software available for the individual information channels is disseminated, or new software is provided for downloading via the IP network 260, via two specific channels CHi and CHs, which each user of the information service obtains. The software which is implemented in the mobile telephone 210 itself in this embodiment is thus updated by downloading updates

provided in the IP network 260 in this case, rather than by marketing/obtaining updates on ROM memory cards.

- 5 Figures 3 to 8 use various display screen presentations to illustrate how the information system illustrated in the form of sketches in Figure 1 and 2 operates and is used.
- 10 Figure 3 shows the accessory 130 from Figure 1 with a display screen presentation of various available information services, from which the user can make a selection. Figure 4 shows the display screen in the search mode using filters which can be specified by
- 15 means of key words.

Figure 5 shows the display screen while displaying a company-related or product-related information service, in this case information about a specific SMS (Short

20 Message Service) feature. Figure 6 shows a display representation of TV program information on a program provider, and Figure 7 shows how weather information is displayed by a program provider. Figure 8 shows the display of a horoscope, on which the formation of a

25 predetermined icon, stored at the terminal end, of a logo header (which may be stored in the terminal or in the associated ROM memory card) and of a variable text can be seen particularly well, in each case transmitted at the time via the mobile radio network and being

30 linked at the terminal end - in the accessory in the display shown in Figure 8 - by combination with the icon and logo to form an attractive overall display. This linking principle also forms the basis of the display screen images shown in Figures 5 to 8.

35

A message which is to be transmitted via the mobile radio network, by means of which a variable text is combined with an icon and a logo in the manner shown in Figure 9, may, for example, have the following

composition: i020x10y10i029x30y10text. This message
(which is, of course, transmitted using a coding
defined in advance) would be interpreted at the
terminal end such that the icon No. 020 (stored
5 locally) is displayed with the x-coordinate of 10
pixels, and the logo No. 029 (likewise stored locally)
is displayed with the x-coordinate of 30 pixels and the
y-coordinate of 10 pixels, together with a transmitted
variable text, on the display screen.

10

The embodiment of the invention is not restricted to
the examples explained briefly above, but is also
feasible in a wide range of modified forms, which will
be directly evident to a person skilled in the art.

7 pts

10/018059
English Translation

#5

GR 99 P 2036

10 Rev. 10/018059 08 MAY 2002

Description

Method and arrangement for optical information presentation

5

The invention relates to a method for optical information presentation on a mobile radio terminal, or an accessory for a or such a GSM module, and to an arrangement for carrying out this method.

10

In the developed industrial nations, mobile telephony has become one of the most dynamic mass markets in recent years and, in the process and virtually at the same time, has exposed development generally comparable to the commercial development of the Internet. The establishment of digital mobile radio networks based on the GSM and PCN standards has thus started to create the preconditions for international and intercontinental mobile telephony, and the increasingly faster extension of these systems means that they are rapidly approaching the aim of everyone being accessible anywhere and immediately by means of mobile telephony.

25 Since, owing to the system requirements, modern mobile telephones have an extremely complex technical design and, furthermore, are not distinguished by being cheap appliances, the manufacturers are, firstly, always looking for opportunities to implement additional useful features which are intended to persuade even people who have no requirement, or even no desire, to be accessible all the time everywhere to purchase a mobile telephone. Minor games features, which are intended to increase the attractiveness of mobile telephones at times, have been found to be unsuitable for this purpose.

On the other hand, there is a large and growing market

for information services which are, in particular, even required while traveling and for which mobile telephones could thus be a suitable implementation means. Thus, fundamentally, mobile telephone
5 manufacturers and information providers have a common interest in finding solutions to further increase the usefulness of mobile telephones by means of additional services for those having such mobile telephones.

10 Methods for this are already known, which, to a certain extent, are also in use in practice - for example the cell broadcast method, which is already used by D2 Mannesmann in Germany. As is known, the GSM mobile radio standard allows the transmission of short
15 messages with a limited range of characters (SMS = Short Message Service), and services such as D2 MessagePlus, which have already been implemented, are based on this capability.

20 However, in practice, it has been found that the previous type of information transmission to mobile telephones and optical information presentation on their display areas cannot satisfy the increased expectations of users for an attractive information
25 display. Even while traveling, the user who has become used to attractive information displays from the standards set by printing media and television is prepared only to a restricted extent to put up with the small alphanumeric display areas of mobile telephones,
30 with their cumbersome text display. Calling up information, or even interactive processes, are also made considerably more difficult by the difficulties in using the keys on conventional mobile telephones. The critical fundamental disadvantage of mobile radio
35 services with providing additional information services which are as attractive as possible with currently known solutions is, however, the restricted available bandwidth.

The invention is thus based on the object of providing an improved method for optical information display on a mobile radio terminal (or an accessory) and of
5 providing a corresponding arrangement, by means of which a considerably more attractive and more informative information display can be provided, while observing the current limitations on the transmission bandwidth.

10

With regard to its method aspect, this object is achieved by a method having the features of claim 1, and with regard to its arrangement aspect, it is achieved by an arrangement having the features of
15 claim 5.

20

Firstly, the invention includes the fundamental idea of providing a mixed graphics/text presentation using predetermined graphics or graphics modules in a way that conserves bandwidth. It also includes the idea of storing a range of graphics or graphics elements at the terminal end, and of maintaining them such that they can be called up, allowing attractive information and commercial presentation without the graphics actually
25 needing to be transmitted via the air interface - that is to say with said bandwidth restriction. In fact, it is sufficient to call up the locally stored graphics by appropriate address and position codes in the terminal (or an accessory) and to display them on its display
30 area in the desired size and position, and to combine them with actually transmitted text sections of a message, in an informative and attractive manner.

35

It is self-evident that, even when using this method, a normal mobile telephone of the present-day conventional type allows an information display whose attractiveness is only limited, due to the small size of the display area - although appliances are now already available

which offer considerably better preconditions in this context in that, for example, when unfolded, they offer a display area occupying virtually the entire appliance surface area and which, in some appliances, is also
5 already in the form of a touch screen and which, in other appliances, has an associated alphanumeric keypad which can be operated relatively well. One preferred embodiment of the proposed method is intended primarily for such appliances.

10

An alternative embodiment is intended for implementation with an accessory, which has a sufficiently large display area and an associated keypad in the form of an organizer or handheld PC - or
15 has a corresponding touch screen.

Such an accessory has an interface which is suitable for linking to the mobile telephone, and can be connected to the mobile telephone via a cable, but
20 preferably via an infrared or radio transmission path.

Irrespective of whether such a range of graphics or graphics elements is stored in a mobile telephone itself or in an accessory for such a mobile telephone,
25 two different approaches are provided, in principle, for updating the range of graphics and the associated software. In a first embodiment, the graphics are stored in a data storage medium which is prefabricated and marketed separately from the terminal, and can thus
30 be replaced by an update directly, when updating is required. In another variant, which may be preferable, especially for commercial purposes, updating can be carried out by downloading from the Internet or some other IP network, so that all that need be provided in
35 the appliance is a read only memory with an appropriate capacity.

As envisaged at present, said additional service is

most expediently implemented with a predetermined number of channels which are each defined, and whose contents are each specified, by the network operator - who is at the same time the provider of the cell broadcast transmission technology. The network operator can then rent the channels prepared in this way to third parties who wish to have a range of information or a commercial message, or both, and (depending on the specific configuration of the system), the user can either use all the channels without any differentiation, or else a group of channels, or even only individual channels, with his terminal being prepared appropriately by storing ranges of graphics associated with selected channels.

In addition to the channels with specified contents, it is also possible additionally to provide channels via which the user is informed of the capability to update his terminal software, or receives other information from the network operator himself.

In addition, advantages and useful forms of the invention are described in the dependent claims and the following description of preferred exemplary embodiments with reference to the figures, in which:

Figure 1 shows an illustration, in the form of a sketch, of a system configuration according to a first embodiment of the invention,

Figure 2 shows an illustration, in the form of a sketch, of a system configuration according to a second embodiment of the invention,

Figure 3 shows an illustration of the display screen of the accessory according to Figure 1 in an initial phase of a call to an information service, and

Figures 4 to 8 show the display screen of the accessory when using different information services.

5 Figure 1 shows an information system 100 as an exemplary embodiment of the invention, in which a simple mobile telephone 110 with a single-line alphanumeric display 111 and a numerical keypad 112 is connected via two interface/transceiver units 121, 122,
10 which are described in GSM specifications 07.05 and 07.07, and an infrared path formed between them, to an accessory 130, which has a large matrix screen 131 and an alphanumeric keypad 132. One such accessory is, for example, an organizer modified for implementation of
15 the invention, which is referred to as a "databank" or a handheld PC. Instead of the keypad, an accessory such as this may also have a touch screen as the input device. The accessory 130 is designed to accommodate a memory card 133, in which the software required at the
20 terminal end to operate the information system is stored, in its respective latest form.

The mobile telephone 110 is connected in the normal way - which will thus not be explained any further here -
25 to a GSM mobile radio network 140, into which, via a suitable access device 150, an information service server 160 feeds a number of information services with differentiated contents, which are disseminated in the mobile radio network 140 via the channels CH1, CH2, ...
30 CHn. These channels are specified by the operator of the mobile radio network 140 and are available to the information service provider. The person using the mobile telephone 110 who wishes to use that information service can - depending on the specific system
35 configuration - access only selected channels, or else all the channels. In Figure 1, the symbolic inscription on the memory card 133 "CH1 CH2" indicates that the user has subscribed to only two selected channels and,

after insertion of the memory card 133 into his accessory 130, has available only the software required for these channels - in particular specific graphics and graphics elements, as well as associated addressing and positioning software.

The information system 100 works in the way described in principle above, in that the information service provider provides schematically specified information services, for example weather reports, traffic reports, travel information etc., via the server 160 in the channels CH1, CH2, ... CHn, and these are disseminated by the operator of the GSM network 140 as "content over the air". The person using the mobile telephone 110 and the accessory 130 satisfies the terminal-end system preconditions for use of the desired information services by obtaining and inserting the ROM memory card 133. In principle, only text information as well as address and position data for calling up and for positioning specific graphics and graphics elements stored in the ROM memory card 133 are transmitted via the server 160 and the mobile radio network 140 - matched to the narrow available bandwidth in the mobile radio network - to the display screen 131 of the accessory 130. The accessory 130 is used to combine the transmitted data with the data stored on the ROM card 133 to produce an informative and attractive information display on the display screen 131.

Figure 2 shows a sketch of an information system 200 of somewhat different construction, in which a high-quality mobile telephone 210 with a multiline matrix display 211 and an alphanumeric keypad 212 is connected to a GSM mobile radio network, which is annotated here by the reference number 220. An information service server 240 is once again connected to the GSM network 220 via a suitable access device 230, and is also connected via a modem 250 to an IP network 260 (for

example the Internet, but possibly also a commercial LAN). The IP network 260 is connected to the GSM mobile radio network 220 via a network interface 270 - which is known per se.

5

In this case as well, the information service is offered in various channels CH1, CH2, ... CHn, and the person using the mobile telephone 200 can obtain the service globally or on a channel-specific basis.

10 Firstly, updating information relating to the terminal software available for the individual information channels is disseminated, or new software is provided for downloading via the IP network 260, via two specific channels CHi and CHs, which each user of the
15 information service obtains. The software which is implemented in the mobile telephone 210 itself in this embodiment is thus updated by downloading updates provided in the IP network 260 in this case, rather than by marketing/obtaining updates on ROM memory
20 cards.

Figures 3 to 8 use various display screen presentations to illustrate how the information system illustrated in the form of sketches in Figure 1 and 2 operates and is
25 used.

Figure 3 shows the accessory 130 from Figure 1 with a display screen presentation of various available information services, from which the user can make a
30 selection. Figure 4 shows the display screen in the search mode using filters which can be specified by means of key words.

Figure 5 shows the display screen while displaying a
35 company-related or product-related information service, in this case information about a specific SMS (Short Message Service) feature. Figure 6 shows a display representation of TV program information on a program

provider, and Figure 7 shows how weather information is displayed by a program provider. Figure 8 shows the display of a horoscope, on which the formation of a predetermined icon, stored at the terminal end, of a logo header (which may be stored in the terminal or in the associated ROM memory card) and of a variable text can be seen particularly well, in each case transmitted at the time via the mobile radio network and being linked at the terminal end - in the accessory in the display shown in Figure 8 - by combination with the icon and logo to form an attractive overall display. This linking principle also forms the basis of the display screen images shown in Figures 5 to 8.

A message which is to be transmitted via the mobile radio network, by means of which a variable text is combined with an icon and a logo in the manner shown in Figure 9, may, for example, have the following composition: i020x10y10i029x30y10text. This message (which is, of course, transmitted using a coding defined in advance) would be interpreted at the terminal end such that the icon No. 020 (stored locally) is displayed with the x-coordinate of 10 pixels, and the logo No. 029 (likewise stored locally) is displayed with the x-coordinate of 30 pixels and the y-coordinate of 10 pixels, together with a transmitted variable text, on the display screen.

The embodiment of the invention is not restricted to the examples explained briefly above, but is also feasible in a wide range of modified forms, which will be directly evident to a person skilled in the art.

Art. 34

July 13, 2001

AMENDED SHEETS

New Patent Claims

1. A method for optical information presentation on information, which is provided via an additional service and is transmitted via an air interface, on a mobile radio terminal (210) or an accessory (130) to a, or such a mobile radio module, in which case a mixed graphics/text presentation is provided, for which purpose stored graphics and/or graphics elements are used in the mobile radio terminal (210) and/or accessory (130), which are called up via address and position data which is transmitted together with text information, and are positioned on an optical display unit (131; 211), characterized in that the additional service is assigned a predetermined number of channels (CH1, CH2, ... CHn) for each information category, and each channel is allocated a respective specific set of stored graphics and/or graphics elements.

2. The method as claimed in claim 1, characterized in that stored graphics and/or graphics elements are updated by memory interchange (133) or by overwriting memory areas, in particular after downloading from an IP network (260).

3. The method as claimed in claim 2, characterized in that at least one predetermined channel (CHi) is used as an information channel for available updates for the terminal software.

4. An arrangement for carrying out the method as claimed in one of the preceding claims, in which case the mobile radio terminal (210) or the accessory (130) has a graphics selection memory (133) for the graphics and/or graphics elements, characterized in that the mobile radio terminal (210) or the accessory (130) has selection means for selecting predetermined channels

77.34

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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[illegible][illegible][illegible]

Abstract

Method and arrangement for optical information presentation

A method for optical information presentation on information, which is provided via an additional service and is transmitted via an air interface, on a mobile radio terminal (210) or an accessory (130) for such a mobile radio module (210), in which case a mixed graphics/text presentation is provided, for which purpose stored graphics and/or graphics elements are used in the mobile radio terminal (210) and/or accessory (130), which are called up via address and position data which is transmitted together with text information, and are positioned on an optical display unit (131; 211).

(Figure 1)

2025 RELEASE UNDER E.O. 14176

FIG 1

100

111

110

112

121

122

130

131

132

133

140

150

160

CH1

CH2

CHn

FIG 3

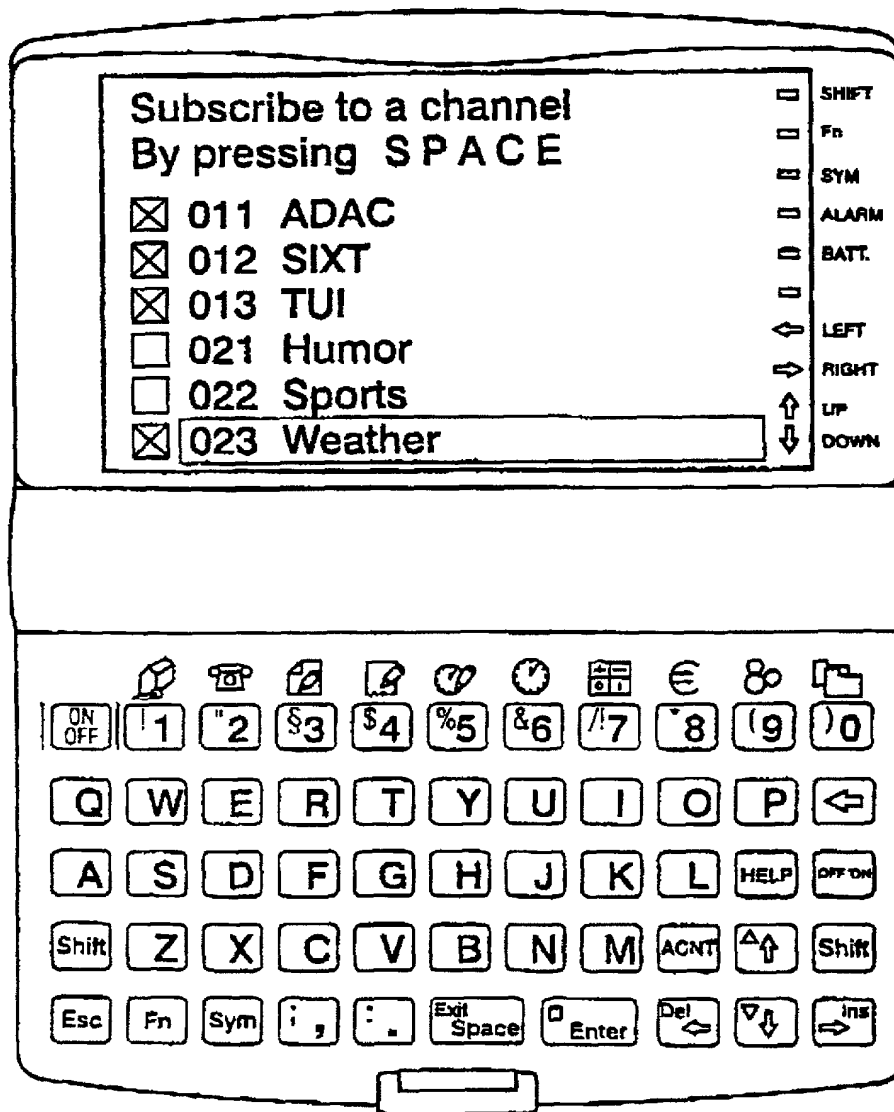


FIG 4

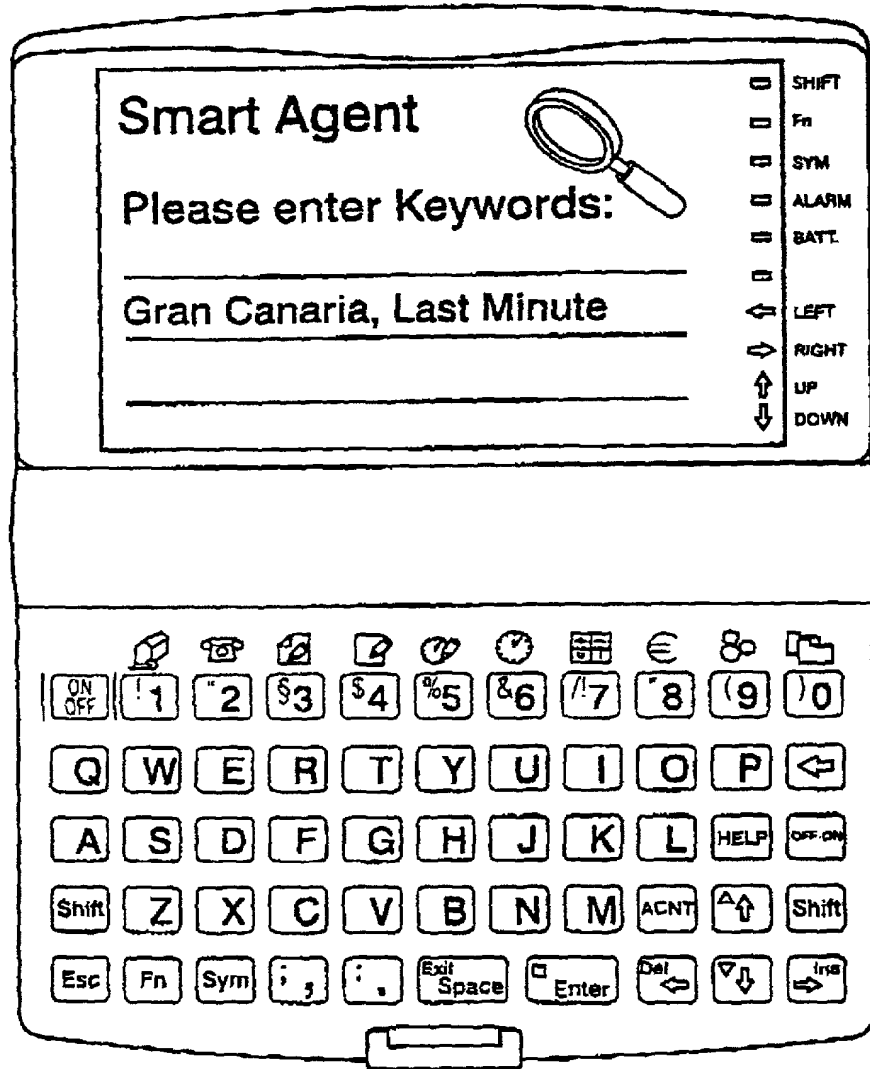


FIG 5

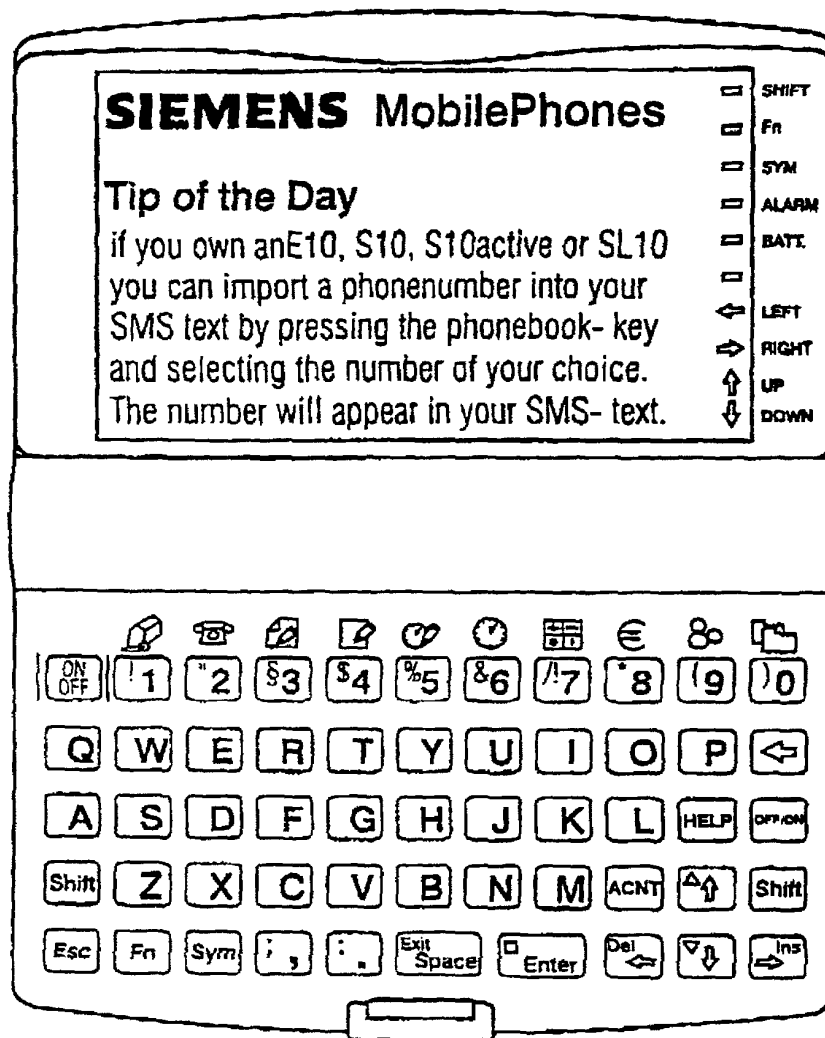


FIG 6

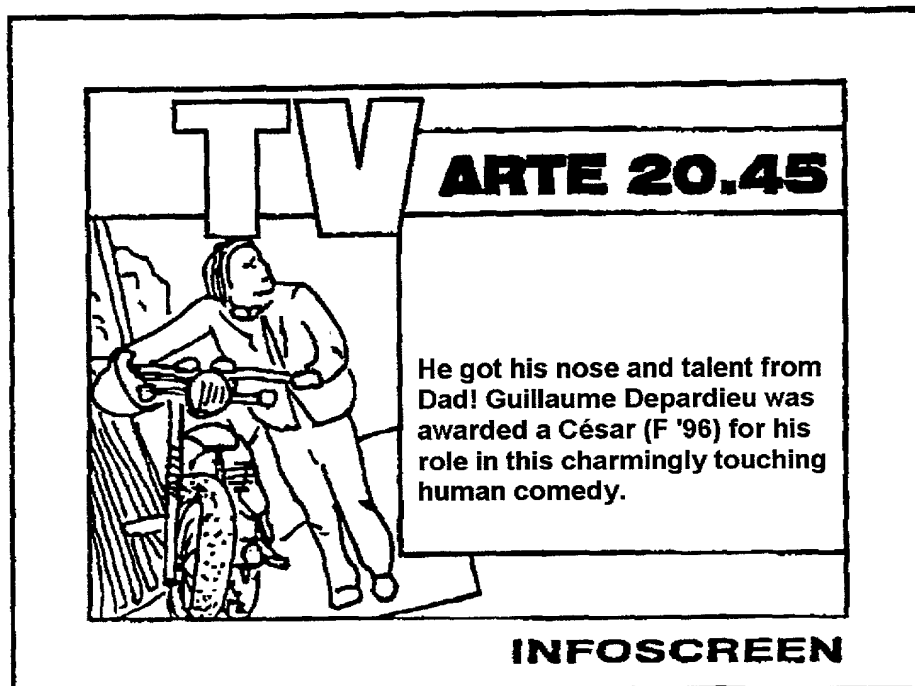
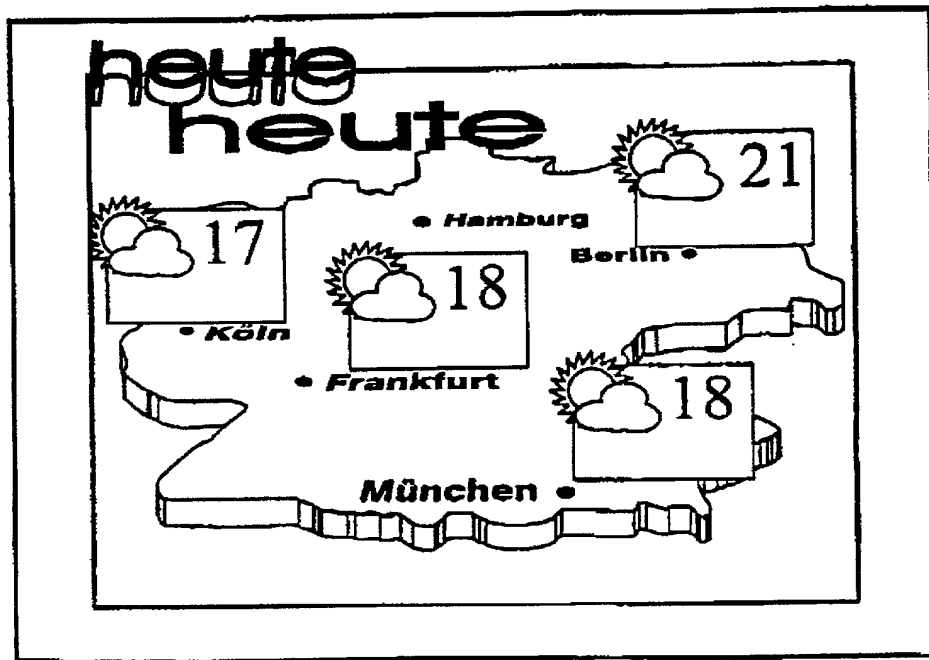
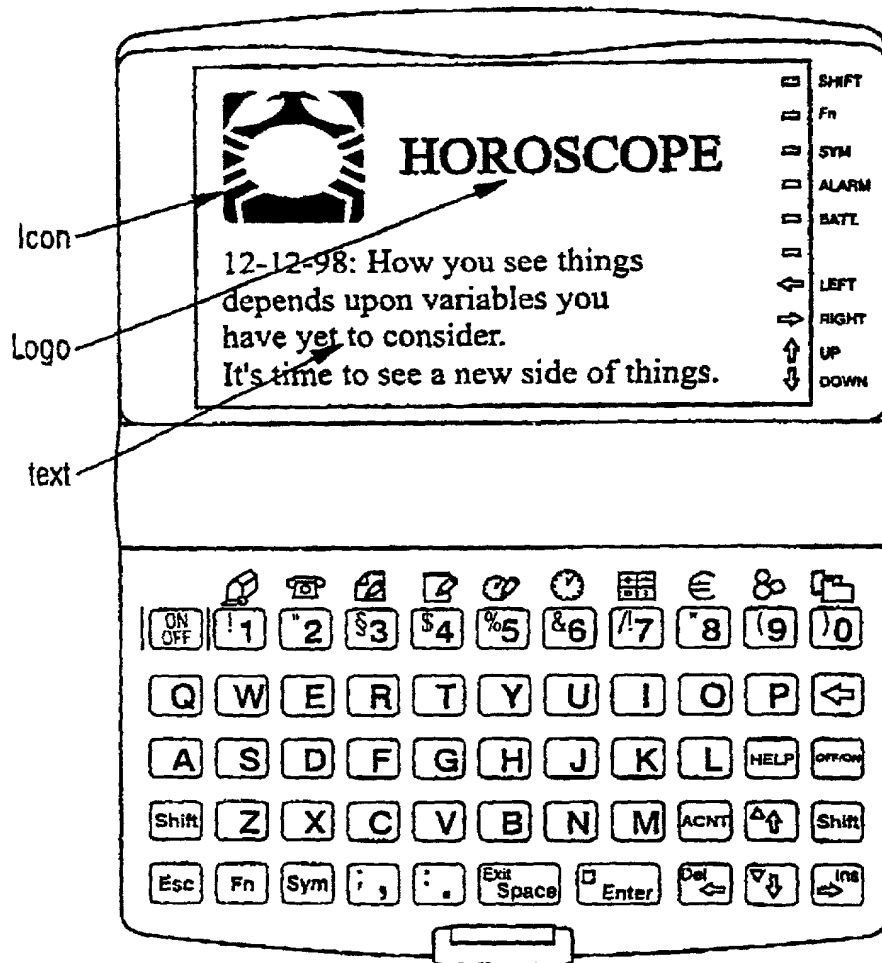


FIG 7



202501 65061001

FIG 8



Declaration and Power of Attorney For Patent Application

Erklärung Für Patentanmeldungen Mit Vollmacht

German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

dass mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,

dass ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

Verfahren und Anordnung zur optischen Informationsdarstellung

deren Beschreibung

(zutreffendes ankreuzen)

☐ hier beigefügt ist.

☒ am 11.04.2000 als

PCT internationale Anmeldung

PCT Anmeldungsnummer PCT/DE00/01113

eingereicht wurde und am _____

abgeändert wurde (falls tatsächlich abgeändert).

Ich bestätige hiermit, dass ich den Inhalt der obigen Patentanmeldung einschliesslich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäss Abschnitt 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Method and device for optical representation of information

the specification of which

(check one)

☐ is attached hereto.

☒ was filed on 11.04.2000 as

PCT international application

PCT Application No. PCT/DE00/01113

and was amended on _____

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

e06030 6906004

German Language Declaration

Prior foreign applications

Priorität beansprucht

Priority Claimed

19927294.8

(Number)
(Nummer)

DE

(Country)
(Land)

15.06.1999

(Day Month Year Filed)
(Tag Monat Jahr eingereicht)

☒

Yes
Ja

☐

No
Nein

(Number)
(Nummer)

(Country)
(Land)

(Day Month Year Filed)
(Tag Monat Jahr eingereicht)

☐

Yes
Ja

☐

No
Nein

(Number)
(Nummer)

(Country)
(Land)

(Day Month Year Filed)
(Tag Monat Jahr eingereicht)

☐

Yes
Ja

☐

No
Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 122 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

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PCT/DE00/01113

(Application Serial No.)
(Anmeldeseriennummer)

11.04.2000

(Filing Date D, M, Y)
(Anmeldedatum T, M, J)

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(Status)
(patentiert, anhängig,
aufgegeben)

pending

(Status)
(patented, pending,
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(Application Serial No.)
(Anmeldeseriennummer)

(Filing Date D, M, Y)
(Anmeldedatum T, M, J)

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(Status)
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[illegible]

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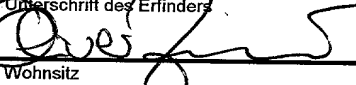
And I hereby appoint

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Ext. _____

Send Correspondence to:

or

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Unterschrift des Erfinders	Datum	Inventor's signature	Date
	12-31-2001		
Wohnsitz		Residence	
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Staatsangehörigkeit		Citizenship	
DE		DE	
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90547 STEIN		90547 STEIN	
Voller Name des zweiten Miterfinders (falls zutreffend):		Full name of second joint inventor, if any:	
Unterschrift des Erfinders	Datum	Second inventor's signature	Date
Wohnsitz		Residence	
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(Supply similar information and signature for third and subsequent joint inventors).